

Applicant: Friedrich BOECKING
Docket No. R.305573
Preliminary Amdt.

AMENDMENTS TO THE CLAIMS:

This listing of claims will replace all prior versions, and listings, of claims in the application:

Listing of Claims:

Claims 1-9. (Canceled)

10. (New) In a fuel injection device, for an internal combustion engine with direct fuel injection, having a housing and at least two valve elements, located in the housing and coaxial to one another, to each of which at least one fuel outlet opening is assigned, and on the outer valve element, radially outward from the at least one fuel outlet opening assigned to it, there is a first sealing region, which cooperates with a valve seat on the housing and which can separate the at least one fuel outlet opening from a high-pressure connection, the improvement comprising an additional sealing region on the outer valve element, between the at least one fuel outlet opening assigned to it and the inner valve element.

11. (New) The fuel injection device in accordance with claim 10, wherein the additional sealing region, immediately after the manufacture of the device, with the outer valve element closed, has a slight spacing, preferably approximately 1 to 2 μm , from the valve seat associated with it.

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12. (New) The fuel injection device in accordance with claim 11, wherein the first sealing region is embodied on the edge of a groove extending around the outer valve element.

13. (New) The fuel injection device in accordance with claim 10, wherein the first sealing region is embodied on the edge of a groove extending around the outer valve element and further comprising an encompassing shallow groove extending approximately from the encompassing groove approximately into the additional sealing region on the outer valve element.

14. (New) The fuel injection device in accordance with claim 11, wherein the first sealing region is embodied on the edge of a groove extending around the outer valve element and further comprising an encompassing shallow groove extending approximately from the encompassing groove approximately into the additional sealing region on the outer valve element.

15. (New) The fuel injection device in accordance with claim 10, wherein the first sealing region is embodied on the edge of a groove extending around the outer valve element and further comprising a plurality of grooves distributed over the circumference and all extending in the axial direction approximately from the encompassing groove approximately into the additional sealing region.

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16. (New) The fuel injection device in accordance with claim 11, wherein the first sealing region is embodied on the edge of a groove extending around the outer valve element and further comprising a plurality of grooves distributed over the circumference and all extending in the axial direction approximately from the encompassing groove approximately into the additional sealing region.

17. (New) The fuel injection device in accordance with claim 10, wherein the additional sealing region is embodied on the edge of an encompassing narrow, deep groove, which groove is located in the direction toward the first sealing region.

18. (New) The fuel injection device in accordance with claim 11, wherein the additional sealing region is embodied on the edge of an encompassing narrow, deep groove, which groove is located in the direction toward the first sealing region.

19. (New) The fuel injection device in accordance with claim 12, wherein the additional sealing region is embodied on the edge of an encompassing narrow, deep groove, which groove is located in the direction toward the first sealing region.

20. (New) The fuel injection device in accordance with claim 13, wherein the additional sealing region is embodied on the edge of an encompassing narrow, deep groove, which groove is located in the direction toward the first sealing region.

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21. (New) The fuel injection device in accordance with claim 15, wherein the additional sealing region is embodied on the edge of an encompassing narrow, deep groove, which groove is located in the direction toward the first sealing region.

22. (New) The fuel injection device in accordance with claim 10, wherein the additional sealing region is embodied on an annular protuberance projecting from the outer valve element.

23. (New) The fuel injection device in accordance with claim 11, wherein the additional sealing region is embodied on an annular protuberance projecting from the outer valve element.

24. (New) The fuel injection device in accordance with claim 12, wherein the additional sealing region is embodied on an annular protuberance projecting from the outer valve element.

25. (New) The fuel injection device in accordance with claim 10, further comprising a guide gap between the two valve elements, and wherein the guide gap communicates with a chamber that communicates at least from time to time with the high-pressure connection.

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26. (New) The fuel injection device in accordance with claim 11, further comprising a guide gap between the two valve elements, and wherein the guide gap communicates with a chamber that communicates at least from time to time with the high-pressure connection.

27. (New) The fuel injection device in accordance with claim 12, further comprising a guide gap between the two valve elements, and wherein the guide gap communicates with a chamber that communicates at least from time to time with the high-pressure connection.

28. (New) The fuel injection device in accordance with claim 17, further comprising a guide gap between the two valve elements, and wherein the guide gap communicates with a chamber that communicates at least from time to time with the high-pressure connection.

29. (New) A method for producing a fuel injection device in accordance with claim 10, comprising the steps of fabricating the outer valve element such that the additional sealing region, with the outer valve element closed, initially has a slight spacing, preferably of approximately 1 to 2 μm , from a valve seat associated with it; and that then by repeated actuation of the outer valve element, the first sealing region and/or the valve seat associated with it is deformed such that the spacing between it and the valve seat associated with it becomes less or tends toward zero.